ENSR
20 New England Avenue, Piscataway, New Jersey 08852-4101
T 732.981.0200 F 732.981.0116 www.ensr.aecom.com

March 9, 2007

Mr. Christopher Kanakis
New Jersey Department of Environmental Protection
Office of Brownfield Reuse
401 East State Street, 6th floor
Trenton, New Jersey 08625
T. 609.633.1460

Subject: Cameron Area Lots 5 & 6 – Revised Remedial Action Workplan Addendum
Former Ingersoll Rand Facility, Phillipsburg, NJ

Dear Chris,

On behalf of Ingersoll Rand Company (Ingersoll Rand), ENSR is providing you with 4 copies of the *Remedial Action Workplan Addendum* (RAWPA) for the Cameron Area – Lots 5 & 6, located at the former Ingersoll Rand facility in Phillipsburg, New Jersey. This RAWPA addresses the proposed remedial actions for only Lots 5 & 6 of the Cameron Area.

A SIR/RIWP for Lot 4.01 of the Cameron Area has been recently submitted to you in an effort to expedite NJDEP approval of the proposed remedial plans in Lots 5 & 6. This approach will allow the remediation of Lots 5 & 6 to proceed without further delay from the additional investigation required in Lot 4.01.

If you have any questions or comments regarding these activities, or would like to discuss further, please feel free to contact me at (732) 981-0200 or Dawn Horst at (201) 573-3031.

Sincerely,

Steven J. Surman, P.E.
Senior Project Manager

Gregg R. Micalizio
Senior Project Manager

Cc: Dawn Horst (Ingersoll Rand)
Michele Devine (PREI)
Gary Brown (RT Environmental)
ENSR File 03710-pburg-7.2

J:\Project\Ingersoll Rand\03710-176\ACO\General Correspondence\To NJDEP\Cameron\Cameron_Lots 5&6 RAWPA.doc

REPORT CERTIFICATION

Remedial Action Workplan Addendum for Lots 5 & 6 of Cameron Area of the former Ingersoll Rand facility in Phillipsburg, New Jersey (March 2007)

The following certification shall be signed by the highest-ranking individual at the site with overall responsibility for that site or activity. Where there is no individual at the site with overall responsibility for that site or activity, this certification shall be signed by the individual having responsibility for the overall operation of the site or activity.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Typed/Printed Name Aaron Kleinbaum, Esq., P.E.

Title Assistant General Counsel and Director of Environmental Safety and Health

Signature _____ Date 3/5/07

Sworn to and Subscribed Before Me on this 5th

Date of March 2007

Notary _____

MERYL J. MILLER
Notary Public of New Jersey
My Commission Expires Jan. 24, 2011

Prepared for:
Ingersoll Rand Company
Montvale, New Jersey

Remedial Action Workplan Addendum for Lots 5 & 6 of Cameron Area of the former Ingersoll Rand facility, Phillipsburg, New Jersey

ENSR Corporation
March 2007
Document No.: 03710-173-0505

ENSR | AECOM

Contents

List of Appendices

List of Tables

List of Figures

1.0 Introduction

This Remedial Action Work Plan Addendum ("RAWPA") has been prepared on behalf of Ingersoll Rand Company (Ingersoll Rand) for Lots 5 & 6 of Cameron Area of the former facility in Phillipsburg, New Jersey ("Site"), which is located at the southwestern corner of the former property (see Figure 1). The purpose of this RAWPA is to update the previous RAWPA (ENSR, 2006) based on the New Jersey Department of Environmental Protection ("NJDEP") comments contained in their August 24, 2006 letter and subsequent verbal comments received by the NJDEP. As noted in a letter, dated February 7, 2007, from Ingersoll Rand to NJDEP, additional site investigation activities were performed at Lot 4.01 of the Cameron Area in December 2006 subsequent to the submittal of the previous RAWPA and additional soil impacts within Lot 4.01 were identified. Due to the findings obtained during the December 2006 site investigation activities at Lot 4.01, a Site Investigation Report/Remedial Investigation Workplan (SIR/RIWP) for soils at Lot 4.01 is being submitted to NJDEP under separate cover, and this RAWPA focuses on Lots 5 and 6 in an effort to expedite the approval of the proposed RAWPA for Lots 5 & 6. This report supplements previously submitted documents and reports including:

- *Draft Remedial Investigation Workplan* (Tellus Consultants, 1994a);
- *Supplemental Draft Remedial Investigation Work Plan* (Tellus Consultants, 1994b);
- *UST Closure and Site Investigation Report* (ENSR, 1996);
- *Site Investigation/Remedial Investigation Report of AOC-3a, 3b, 26, 29, 31, and 37* (ENSR, 2001);
- *Remedial Investigation Report Addendum for South-Side AOCs* (ENSR, 2002a); and
- *Southside Baseline Ecological Investigation* (ENSR, 2002b);
- *Soil Remedial Investigation Report* (ENSR, 2004b);
- *Site History Report* (ENSR, 2004c); and
- *Site Investigation Report, Remedial Investigation Report, and Remedial Action Work Plan for the Cameron Area of the Former Ingersoll Rand Company Facility* (ENSR, 2005).

1.1 Historical information

1.1.1 Site history

A detailed discussion of site history, including a historical aerial photograph review, can be found in the previously submitted October 2004 *Site History Report* (*SHR*). A previously submitted SHR provides an interpretive aerial history pursuant to N.J.A.C. 7:26E-3.1(c), as well as a detailed discussion of review of other pertinent historical records; therefore, this information is not discussed or included in this document.

Prior to the commercial development of the site, the site appears to have been used as farmland. The Cameron Area remained vacant until circa 1910-1912 when Ingersoll Rand acquired the A.S. Cameron Pump Works, a pump company. In 1913, Ingersoll Rand relocated to the new manufacturing facilities, constructed in support of pump manufacturing operations, located at the southwestern corner of the Phillipsburg, New Jersey site.

Through the 1970's, the facility was expanded around a central building in the Cameron Area. After the 1970's, as a result of changing technology and corporate reorganization, manufacturing activities declined. In 1987, pump manufacturing operations were moved into buildings located in the main facility area. Subsequently, the building structures in the Cameron Area were razed in the late 1980's and early 1990's, leaving only concrete foundations, former roadways, and former railroad beds. In August 2000, the pump manufacturing business was sold to FlowServe Corporation (FlowServe) which continued to operate at the

main portion of the facility under a lease from Ingersoll Rand. In September 2004, Ingersoll Rand sold the Phillipsburg site to Preferred Real Estate Investments, Inc. (PREI), which now leases space in the main portion of the facility from Phillipsburg Associates I.

Presently, the Cameron Area remains vacant and unimproved.

1.1.2 Historic site investigations and remedial activities

Environmental investigations at the former Ingersoll Rand facility were commenced in response to the identification of light non-aqueous phase liquids (LNAPL) on the groundwater surface beneath the plant area in the 1970's as well as in response to NJDEP inspections. By late 1994, a total of 38 areas of concern (AOCs) were identified, five of which were located within the Cameron Area. Through various investigations and remedial activities, each of these AOCs has received NJDEP's concurrence that no further action (NFA) was necessary. Documentation of NJDEP concurrence is provided as Appendix A.

The results of site history research, performed subsequent to issuance of NFA concurrence, identified a series of potential AOCs that were not previously identified within the Cameron Area. These newly identified AOCs are documented in the SHR, which was prepared for the entire former Ingersoll Rand site. The primary objective of the SHR was to address discussions with NJDEP representatives (specifically, Maria Franco-Spera, the former Case Manager, and David Doyle, Technical Coordinator) concerning the need for a site history review. Since the preliminary assessment activities at the Ingersoll Rand site were conducted prior to July 1, 1993 – the effective date of the Technical Requirements for Site Remediation (N.J.A.C 7:26E) – the SHR was prepared to summarize the site history of the former Ingersoll Rand facility and to demonstrate that previously conducted activities were in substantial compliance with the N.J.A.C 7:26E. These discussions concerning the need and development rationale for the 2004 ***SHR*** were documented in ENSR's December 9, 2003 letter to NJDEP.

As described in the 2004 ***SHR***, site history was researched utilizing a series of historical maps and historical drawings as well as available reports and correspondence relating to environmental issues, historical aerial photographs, Environmental Data Resources (EDR®) environmental database report, Sanborn® Fire Insurance and Factory Insurance Association (FIA) maps, interviews with facility personnel, and review of the reports summarizing previously conducted environmental activities.

Based on the data gathered during preparation of the 2004 ***SHR***, several potential AOCs were identified in addition to those documented through previous investigations at the former Ingersoll Rand facility. The potential AOCs identified in the Cameron Area include:

- Former coal storage areas (AOC-46);
- Former and current transformer locations (AOC-49);
- Dry wells, cesspools, pits, & leach fields (AOC-50);
- building sumps, pits, and floor drains (AOC-52);
- Site subsurface utilities (AOC-53) (identified in Cameron Area);
- Former ASTs and USTs and fuel filling areas not previously identified (AOC-54);
- Railways where loading and unloading activities occurred (AOC-55) (identified in Cameron Area);
- Former boilers, ovens, furnaces, and Incinerators (AOC-57);
- Fill areas (other than landfills) (AOC-58) (identified in Cameron Area);
- Roof/process vents and roof drains (AOC-59); and
- Former outdoor scrap pads, storage areas, and process areas not previously identified (AOC-60).

These AOCs are summarized in Table 1 and their locations are depicted on Figure 2.

1.1.3 Site investigation/remedial investigation, November-December 2004

Based on the conclusions presented in the 2004 *SHR*, as well as discussions with Ingersoll Rand and NJDEP, additional soil sampling was required across the Cameron Area to address potential AOCs identified in the 2004 *SHR* as well as potential source areas of chlorinated impacts in groundwater. Based on the number and distribution of these potential AOCs, a variance request was submitted to perform sampling at the site on a grid-basis and to address contaminants of concern across the Cameron Area instead of on an AOC-by-AOC basis. NJDEP approved this request in their December 30, 2004 letter. However, to address NJDEP's concerns related to the investigation of potential source areas for the chlorinated volatile organic compound (VOC) impacts identified in site groundwater, at least 10% of the soil borings were extended to bedrock or refusal. Additionally, the grid-based sample locations were modified based on locations of newly identified AOCs in an effort to bias samples to the worst-case locations.

On behalf of Ingersoll Rand, ENSR conducted a soil site investigation and remedial investigation activities in November-December 2004, as was proposed in ENSR's 2004 *SHR* for Lots 4.01, 5, and 6 of the Cameron Area, as well as a proposed Rt. 22 connector road (as presented on PREI's Final Subdivision Plan, dated January 20, 2005). The purpose of these activities was to complete delineation of confirmed soil contamination at the potential AOCs identified in the 2004 *SHR* and to develop an appropriate action plan for final remediation in the Cameron Area to expedite closure and re-development of the site. Field work for this task was completed in two phases. The SI phase of sampling was conducted in November 2004 and the RI phase of sampling was conducted in December 2004. The results of this previous SI and RI activities were presented in detail in the May 2005 Site Investigation, Remedial Investigation, and Remedial Action Workplan (*2005 SI/RI/RAWP).* The discussion below presents a summary of the previous SI/RI activities with a focus on Lots 5 and 6 of the Cameron Area. Because the previous 2005 SI/RI/RAWP document has been previously submitted and reviewed by the NJDEP, the discussion below is presented exclusively as a summary.

Sampling was conducted at AOC locations across the majority of Lots 5 and 6 to complete investigation and delineation of confirmed impacts. Contaminants of concern identified through the aforementioned investigations include priority pollutant metals (PP Metals) (specifically arsenic, copper, lead, and nickel), polycyclic aromatic hydrocarbons (PAHs) (specifically benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene)), and polychlorinated biphenyls (PCBs).

Based on the results of the November – December 2004 SI/RI activities, horizontal delineation of impacts has been completed within or to the Cameron Area boundaries, and the delineation extents are shown on Figure 3. ENSR delineated the extent of the PAH, PCBs, and PP Metals impacts. The PAH impact occurs across approximately ¾ of Lot 6 (mainly within the western and central portions of this lot) and across the western-northwestern portion of the Lot 5, with limited PAH impacts present along the southeastern boundary with this impact extending approximately 80 feet northeast of Lot 5 at this location. PP Metals impacts occur sporadically in most cases and exist across the northern and northwestern ends of the Lot 6 and in two areas at the western and northern ends of the Lot 5. In addition, PP Metals impact is present across a right-of-way area contiguous to the eastern boundary of the Lot 5. PCB impact is limited to three small isolated areas at the northern-northeastern end of the Lot 5. It is important to note that horizontal delineation was assessed by elevation, not sample depth (e.g., sample C4402.5, which was collected at 2.5 feet below ground surface (bgs) or 345.4 feet above mean sea level (AMSL) was delineated to the north by C6406.0 which was collected at 6 feet bgs or 344.8 feet AMSL). Additional offsite investigation conducted in 2006 completed delineation at the western property boundary where foundry sand-derived fill material (FSDF) was observed. The findings of this investigation will be summarized in a report to be submitted to the NJDEP under separate cover.

The PP Metals and PAH impacts appear to be related to the use of impacted fill material (AOC-58) (i.e., spent foundry sand) and emissions from historic operations of former combustion units (AOC-57). Additional sources of PAH impact could be related to historical filling operations utilizing spent foundry sand and other materials from the Ingersoll Rand foundry operations and the release and subsequent deposition of soot and

ash from current and historic burning of coal and wood for heating of nearby businesses and residences. PCB impacts may be related to former oil-containing electrical equipment (AOC-49) and various storage tanks and other fuel handling activities (AOC-54).

Impacts remaining in Lots 5 and 6 of the Cameron Area are proposed to be addressed with the following engineering controls and remedial actions:

- limited excavation;
- repair and supplement of existing concrete foundations;
- installation of a geotextile fabric and rip-rap cover along the western site boundary;
- installation of a soil cap at the northern property boundary; and
- maintenance of existing soil cover and vegetation, where appropriate.

The engineering controls and remedial actions for the Cameron Area will be implemented under a Deed Notice, prepared separately for Lots 5 and 6, which will provide for their long-term protection.

As previously reported, groundwater investigations at the Cameron Area have confirmed that dissolved-phase chlorinated compounds are present in excess of the NJDEP Groundwater Quality Criteria (GWQC) in this area. However, the comprehensive soil investigations conducted throughout the Cameron Area did not reveal the presence of any source material related to chlorinated VOC impacts to groundwater. Groundwater impacts in the Cameron Area are being addressed separately from soil impacts in this area; the groundwater across the entire former Ingersoll Rand facility (including the Cameron Area) is a separate AOC and is being addressed in a separate study.

Based on Section 3 of the *Vapor Intrusion Guidance* (NJDEP, 2005), because there are no current receptors within Lots 5 and 6 of the Cameron Area, a complete vapor intrusion (VI) pathway is not present at the site and as such, an additional investigation of the VI is not warranted. However, based on soil screening measurements with a ppbRAE during the soil investigations as well as the presence of trichloroethylene (TCE) in groundwater in excess of the Groundwater Screening Levels for Alternate Soil Textures, additional investigations or mitigation may be required if the site is ultimately redeveloped.

1.2 Alternate remediation criterion proposal

ENSR evaluated all the arsenic soil data collected from the site which included approximately 1,000 individual soil sample analytical results that were collected from all phases of investigations at the former Ingersoll Rand facility. Based on analysis of the distribution of results, it is evident that arsenic concentrations below approximately 30 mg/kg at the site occur in a normal distribution suggesting that arsenic concentrations in this range are naturally occurring and not a result of industrial activities or discharges at the former facility. Specifically, the findings indicate that the 95th-percetile concentration within this normal distribution of arsenic data (when impacts greater than 45 mg/kg are removed) is approximately 27 mg/kg. Based on the data analysis included in the petition for variance included in Appendix I, ENSR is proposing an alternative remediation criterion (ARC) for arsenic of 30 mg/kg.

NJDEP accepted an alternative remediation criterion for beryllium in their January 25, 2005 letter (NJDEP, 2005). This ARC allows for the use of 16 mg/kg as the maximum allowable concentration of beryllium in soil rather than the 2 mg/kg criterion presented in the Soil Cleanup Criteria.

2.0 Physical setting

2.1 Site description

The former Ingersoll Rand site is located at 942 Memorial Parkway in Phillipsburg, New Jersey. The Cameron Area is approximately 25 acres in size and located at the southwestern corner of the former Ingersoll Rand property. Lots 5 and 6 occupy northern and central portions of the Cameron Area. To the east of the Cameron Area is a Class II Sanitary Landfill, formerly used by Ingersoll Rand for the disposal of site-generated construction/demolition debris and spent foundry sand. To the south lies a mixed residential and commercial area. The Cameron Area is bound to the north by Center Street and on the west by Green Street. The land beyond these northern and western boundaries is predominantly residential, with some commercial use also present.

As shown on the USGS 7.5-minute Quadrangle Map for Easton PA-NJ Quadrangle (Figure 1), topography of the Cameron Area is generally flat; however, the topography of the area is approximately ten feet higher than the majority of Green Street to the west of the site. The site's western edge has a steep slope between the facility fence line and the curb line at Green Street. Based on historical maps of the area, the original topography of the Cameron Area sloped gently to the west. However, the Cameron Area was leveled by filling activities during facility construction resulting in the Cameron Area's generally flat topography. The Cameron Area's topography rises to approximately 355 feet AMSL at its eastern border with a Class II Sanitary Landfill and northeastern boundary with the main facility area. Elevation decreases in all other directions; dropping 5 to 10 feet along the western boundary of Green Street.

The majority of the ground surface of Lots 5 and 6 are either paved or covered by concrete. Grass-covered areas and vegetation is present along the northern-northwestern portions of Lot 6 and along the western boundary of Lot 5.

2.2 Local and regional geology

Bedrock underlying the Cameron Area consists of two major geologic units. The older unit, the Allentown Formation, which is present throughout most of the site, consists of a very fine to medium grained, gray to dark gray dolomite dating from the late Cambrian period. The other rock unit, the Rickenbach Formation, is a fine to coarse grained, light to dark gray dolomite with some breccia and chert beds of early Ordovician age. This formation is present at the southern end of the Cameron Area. Both formations extend in a north to northeasterly direction and generally dip to the southeast.

The Allentown and Rickenbach Formations are complexly folded and faulted. Small-scale faulting may be present onsite, and the Whippoorwill Thrust Fault is located within ½-mile of the Cameron Area.

Bedrock below the site displays characteristics of an active karst aquifer, as evidenced by a local sinkhole activity and borehole instability during the previous monitoring well installations onsite. Open void spaces have also been encountered in the bedrock during the previous drilling activities at the Cameron Area.

Site geology is discussed in greater detail in the January 2005 *Annual Groundwater Monitoring Report*, where a Geologic Conceptual Model was presented.

2.3 Hydrogeology

No overburden aquifers are present onsite. Groundwater is first encountered in the fractures and openings in the bedrock. Groundwater potentiometric surface in the Cameron Area ranges from approximately 261 to 267 feet AMSL (approximately 86 to 92 feet below ground surface (bgs); based on data collected in 2005). Historic groundwater elevation measurements indicate significant fluctuations in groundwater elevation. Due to the

large documented seasonal variations in the groundwater potentiometric surface, site monitoring and recovery wells have been constructed as open-borehole wells, often with open borehole lengths of 125 to 150 feet.

The flow of water through dolomitic bedrock is primarily related to the size and the number of openings such as faults, fractures, joints, and bedding openings. Groundwater flow in a dolomitic aquifer system may follow complex pathways difficult to identify even with the most modern investigative techniques. The direction of groundwater flow below the Cameron Area is generally believed to be in a northeasterly direction, based on bedrock structure and piezometric surface data. A southwest component of flow may be present.

Groundwater issues at the Cameron Area are being addressed separately relative to a site-wide condition including LNAPL impact in the main facility area and dissolved chlorinated impacts throughout much of the former Ingersoll Rand facility property.

2.4 Surface water and wetlands

Based on the NJDEP Freshwater Wetlands Maps as presented in the NJDEP Geographic Information System (GIS) Resource Data CD-set (1996), wetlands are present on the former Ingersoll Rand site. None of these are on or near the Cameron Area. No man-made or natural surface water bodies are on or near the Cameron Area.

2.5 Sensitive receptor evaluation

Based on the receptor evaluation contained in the 1994 ***RIWP***, the July 2002 ***Southside Baseline Ecological Investigation*** for the southern portions of the site, and the July 2004 ***Baseline Ecological Evaluation*** for the entire site, as well as NJDEP's letter dated December 30, 2004, no sensitive receptors were identified on or near the Cameron Area, nor were any migration pathways identified near the impacted areas of the Cameron Area.

3.0 Remedial action selection report

3.1 Remedial selection

Based on the locations and concentrations of impact within Lots 5 and 6 of the Cameron Area, ENSR evaluated several remedial options including excavation and disposal of contaminated soil, deed restrictions and engineering controls, and in-situ immobilization. Based on our evaluation of these technologies, it was determined that limited excavations coupled with a site-wide Deed Notice and implementation of engineering controls where impacts remain in excess of the Non-Residential Direct Contact Soil Cleanup Criteria ("NRDCSCC") would be the most cost-effective and implementable solution while maintaining a high degree of remedial effectiveness as well as the greatest community benefit to the site's neighbors.

Based on our overall remedial alternatives analysis, excavation and off-site disposal could provide high short-term effectiveness; however, this option is costly and has drawbacks in comparison to the remediation solution chosen by ENSR for implementation. Specifically, the large volume of impacted material in each area that would require excavation to the total depth would result in increased material handling steps and result in large costs associated with importing substantial backfill material necessary to bring the Lot 5 and 6 to a level grade and support future use of this area. In addition, excavation, transportation, and off-site disposal also add complexity and increased risks (e.g., generation of fugitive emissions during an operation) through extensive movement of impacted materials.

The following table summarizes the evaluation parameters and estimates of cost, effectiveness, implementability, and benefit to the surrounding community.

Remedial Action (permanent/non-permanent)	**Cost**	**Short-Term Effectiveness**	**Implementability**	**Community Benefit**
Limited excavation with Deed Restriction and Engineering Controls	Medium	High	High	High
Deed Restriction w/ Engineering Controls	Low	High	High	Medium
Excavation and disposal	High	High	Low	Medium
In-situ treatment/immobilization with PCB removal	Medium – High	Low-Medium	Low	High

ENSR evaluated options to address the vapor intrusion pathway since data indicates a potential VI issue if future development causes a complete vapor pathway and receptor; as previously indicated no receptors are currently present on the site. The following table summarizes the evaluation parameters and estimates of cost, effectiveness, implementability, and benefit to the surrounding community.

Remedial Action (permanent/non-permanent)	Cost	Short-Term Effectiveness	Implementability	Community Benefit
Institutional Controls	Low	High	High	NA
Install Vapor Barrier	High	High	Low	NA
Install Sub-slab Depressurization System	High	High	Low	NA

3.2 Effectiveness analysis and certification of proposed remedial actions

ENSR engineers reviewed the selected remedial activities for effectiveness at controlling the standard routes of exposure at Lots 5 & 6 of the Cameron Area, including non-residential direct contact, ingestion, and inhalation. Based on the need to control each of these potential exposure pathways, ENSR developed the site specific engineering controls detailed in the engineering design and specifications package provided separately in Appendix B. As detailed in Section 4 of this RAWPA and depicted on Figure 4, ENSR has proposed the use of six engineering controls (EC-1 through EC-6) over Lots 5 and 6 of the Cameron Area. A discussion of the effectiveness of each of the proposed remedial actions for the Cameron Area to limit exposures is set forth below.

- Existing concrete cap/asphalt cap (EC-1): As shown on Figure 4, a very large portion of Lots 5 and 6 in the Cameron Area is covered by existing concrete foundation pads and asphalt. ENSR proposes to utilize these existing materials as an appropriate and cost-effective way to confine impacts present in soil below these materials. This minimum 6-inch-thick physical barrier will prevent direct contact to underlying soils by providing a solid barrier between the surface and potentially impacted soil. The ingestion and inhalation pathways are also sufficiently controlled by the presence of this barrier.
- Repair of breaches in concrete/asphalt (EC-2): As shown on Figure 4, ENSR proposes to repair and supplement the existing concrete and asphalt caps (EC-1) by repairing breaches and gaps in these materials. Again, this minimum 6-inch cap will prevent direct contact, ingestion and inhalation of any impacted soils present below this engineering control by providing a physical barrier between the surface and potentially impacted soil below.
- Soil/vegetative cap (EC-3): As shown in Figure 4, ENSR proposes the use of a 2-foot-thick soil and vegetative cap at the northern and northwestern property boundaries of Lots 5 and 6 where pedestrian access is most likely. This engineering control will be a physical barrier that will prevent direct contact, ingestion, and inhalation exposure pathways by creating a 2-foot-thick clean buffer zone between the surface and potentially impacted soil below.
- Geotextile and riprap cap (EC-4): As shown on Figure 4, ENSR proposes to place geotextile fabric overlayed with approximately 12-inch-thick riprap (stone) layer along the western property boundary of Lots 5 and 6. This engineering physical barrier will prevent direct contact, ingestion or inhalation of impacted soils below the geotextile by creating a one-foot thick stone barrier that would be difficult to penetrate as well as a liner that would prevent any sedimentation, dust generation, or seed germination to occur.
- Limited excavation (EC-5): As shown on Figure 4, ENSR proposes to conduct limited excavation of PCB impacts greater than 10 milligrams per kilogram (mg/kg) in a former pit located in Lot 5 of the Cameron Area and will cap any remaining impact with concrete or asphalt (EC-2). These capping materials will serve as a physical barrier will eliminate the potential for exposure through direct contact, ingestion, or inhalation.

It is important no note that the results of the previous investigation confirmed the presence of TCE in a subsurface soil sample C2102.0 at a concentration 1.4 mg/kg, which was slightly in excess of the NJDEP Impact to Groundwater Soil Cleanup Criteria (IGWSCC) of 1 mg/kg. Considering the depth to groundwater in this area (86-92 feet bgs), ENSR will perform additional vertical delineation of TCE impact. ENSR will advance four soil borings in each primary compass direction at 10 feet from the soil boring location C21. Continuous soil cores will be collected to a maximum depth of 4 feet bgs and screened with a PID. In the absence of the potential impact, soil samples will be collected at the 2.0-2.5 feet bgs interval. In the presence of the potential impact, soil samples will be biased to the depth of an impact. The collected samples will be submitted to a laboratory for TCE analysis. If the concentrations of TCE in the collected samples are detected greater than 2-times the IGWSCC, or if the aerial impact exceeds 2,500 square feet (50-feet x 50-feet area), impacts will be addressed through excavation of the impacted areas and off-site disposal will be implemented.

- Existing surface cover (EC-6): As shown on Figure 4, ENSR proposes to leave the existing surface soil cover in place in portions of Lots 5 & 6 where impacts are present at depth and the overlying soil is unimpacted. This physical barrier will serve as an engineering control and will prevent direct contact, ingestion, and inhalation of identified impacts in subsurface soil by leaving an unimpacted buffer between the surface and the potentially impacted soil at depth. Further, this barrier limits the potential for dust generation since the surface soil would need to be eroded prior to exposing potentially impacted materials at depth.

Each of the proposed engineering controls will be maintained for long-term effectiveness as described in the Draft Deed Notices included as Appendix C. In summary, the Draft Deed Notice for each lot will require annual inspections of the engineering controls to assess their overall protectiveness and to ensure that the land-use of these properties remains consistent with the use restrictions set forth in the corresponding Deed Notice. The Draft Deed Notices require that any surface disturbances across the Cameron Area will be conducted under applicable solid waste regulations or under an approved soil reuse plan and all such activities are to be performed by OSHA 40-hour HAZWOPER trained workers.

3.3 Vapor intrusion

An institutional control (i.e., Deed Notice), will prevent potential exposure to vapor by requiring the property owner to further evaluate and or mitigate the VI pathway during redevelopment activities. As previously indicated, since no receptors are currently present within Lots 5 and 6 of the Cameron Area, a VI pathway is not present. Because no active receptors are present, installation of a vapor barrier or sub-slab depressurization system is not required at this time.

4.0 Proposed remedial actions

4.1 Summary of proposed remedial actions

As documented in the 2005 *Cameron SI/RI/RAWP* and as shown in Figure 3 of this document, soil impacts identified in Lots 5 & 6 of the Cameron Area consist of PAHs, PCBs, and select PP Metals. Delineation of the impacts has been completed and, as stated previously, off-site PAH impact will be addressed in a separate submittal. This submittal focuses on activities within Lots 5 & 6 of the Cameron Area parcel boundaries only. The entire Cameron Area will be placed under a deed restriction to limit the use of the property to non-residential purposes. The nature and extent of soil impacts identified in each portion of the Cameron Area as well as the proposed remedial action for those specific areas is described below.

ENSR has developed an air monitoring plan (AMP) that will be implemented during the proposed remedial activities. The AMP is provided in Appendix H.

4.1.1 Engineering controls

(a) Engineering control 1 (EC-1): Existing concrete/asphalt cap

The majority of the Cameron Area is covered by an existing network of concrete slab foundations and asphalt materials. As shown on Figure 3, impacts identified in the Lot 5/Lot 6 area included PAHs and PP Metals at depths greater than 1 foot below the existing concrete or asphalt surfaces. To address these impacts, ENSR proposes to utilize the existing concrete and asphalt as an engineering control. Existing concrete thickness across the existing pad ranges from 0.5 to 3 feet. As shown on Figure 4, this existing engineering control will be maintained over the vast majority of the Lot 5/Lot 6 portion of the Cameron Area and as detailed in Section 3.2 will prevent exposure to impacts beneath the concrete/asphalt. Details of the extent and thicknesses of the existing concrete and asphalt surfaces are provided in the Engineering Design Plans and Specifications submitted as Appendix B.

(b) Engineering control 2 (EC-2): Repair and supplement to the existing cap

As shown on Figure 4, there are several areas within the existing concrete cap in the Lot 5/Lot 6 area that require repair or supplementation to provide a continuous engineering control. ENSR proposes to repair cracks or gaps in the concrete greater than 2-inches in diameter and to fill existing pits or gaps in the concrete or asphalt surface. A two-inch-wide crack scenario was selected as the minimum width because it is not anticipated that direct contact can be accomplished given this spacing, the potential for ingestion will be significantly limited, and it is unlikely that high winds would have the ability to mobilize dust gaps smaller than this. To seal the cracks and gaps, ENSR proposes to remove soil within these breaches, gaps, or pits to approximately 1 foot below grade. Excavated soil will be managed pursuant to the Soil Reuse Plan in Appendix D. A 6-inch-thick layer of crushed stone or course sand/gravel will then be placed into breached surfaces, followed by placement of a 6-inch-thick layer of asphalt or concrete as necessary. Cracks that do not provide access to remove soil or other material within them will be repaired by sealing the crack with a bituminous sealant. Details related to the implementation of the repair and supplement of the existing concrete and asphalt surfaces are included in the Engineering Design Plans and Specifications included as Appendix B.

(c) Engineering control 3 (EC-3): Soil/vegetative cap

As shown on Figure 4, a soil and vegetative cap is proposed along the northern and northwestern boundaries of the Lot 5/Lot 6 portion of the Cameron Area where pedestrian access is most likely. Impacts identified in this area include select metals and PAHs that exceed their corresponding NRDCSCC. Additionally, ENSR proposes to reuse potentially impacted soil from the western property boundary excavations and regrading the area to raise elevation along the northern property boundary. Soil reused in this area will be placed beneath this proposed 2-foot thick soil and vegetative cap to prevent potential exposure. As presented in the

engineering design plans, soils will be excavated and regraded, as needed, to facilitate the installation of this engineering control. Detailed specifications and fill descriptions are included in the Engineering Design Plans and Specifications included as Appendix B.

(d) Engineering control 4 (EC-4): Geotextile and rip-rap cap

As shown on Figure 4, ENSR proposes to install a geotextile and rip-rap cover along the western property boundary of the Lot 5/Lot 6 portion of the Cameron Area to limit exposure to the underlying soils which are impacted with metals and PAHs in excess of the NRDCSCC. Specifically, ENSR proposes to install a gabion knee wall at the curb line, regrade the boundary slopes as may be required, place a geotextile fabric across the exposed soil, and finally place a 12"-thick rip-rap layer to complete a contiguous cover of the sideslope between the curb and concrete foundation wall along the western property boundary. As presented in the engineering design plans included as Appendix B, soils will be excavated and regraded, as needed, along the western property boundary to the curb-line to facilitate the installation of the gabion knee wall and rip rap and geotextile cover. Excavated soil will be managed pursuant to the Soil Reuse plan in Appendix D.

(e) Engineering control 5 (EC-5): Limited excavation

ENSR identified one sample location at or near the surface in the Lot 5/Lot 6 portion of the Cameron Area where identified impacts were in excess of the NRDCSCC. To address these impacts, it is ENSR's intention to excavate impacts at this location and dispose of the impacted soil offsite. As shown on Figure 4, limited excavation is proposed at the C20 sampling location where PCB concentrations (17 mg/kg) exceed the limits for EPA risk based cleanup options under the Toxic Substances Control Act ("TSCA") and lead, copper, and nickel concentrations were identified above the NRDCSCC in surface soils in what appears to be a former pit.

Excavation at C20 will extend to a minimum of two feet (approximately 33 cubic yards) where post excavation soil samples will be collected as per the requirements of N.J.A.C. 7:26E-6.4. Excavation will continue as necessary until PCB concentrations are 10 mg/kg or less. Excavated PCB impacted soil will be disposed off-site at a pre-approved solid waste disposal facility. Once excavation has been completed, the open excavation will be filled with imported certified clean fill to one-foot of the surface and the remaining one-foot of open excavation will be finished with a 6"-thick stone sub-base prior to the placement of concrete or asphalt as described in subsection (b) above.

As indicated in Section 3.2, due to identification of TCE impact in the boring location C21, ENSR will perform additional vertical delineation of TCE impact in this area via advancing four soil borings in each primary compass direction at 10 feet from the C21 location. Continuous soil cores will be collected to a maximum depth of 4 feet bgs and screened with a PID. In the absence of the potential impact, soil samples will be collected at the 2.0-2.5 feet bgs interval. In the presence of the potential impact, soil samples will be biased to the depth of an impact. The collected samples will be submitted to a laboratory for TCE analysis. If the concentrations of TCE in the collected samples greater than 2-times IGWSCC are identified, or if the aerial impact exceeds 2,500 square feet (50-feet x 50-feet area), impacts will be addressed through excavation of the impacted areas and off-site disposal will be implemented.

(f) Engineering control 6 (EC-6): Existing surface cover cap

Impacts of arsenic were identified in subsurface soil in areas to the east (in Lot 5) of the existing concrete cap. Based on the presence of unimpacted soil at the surface – as evidenced by surface soil samples from C33 and C38 – this area will be addressed by leaving the existing unimpacted soil in place to serve as a cap (shown on Figure 4). Detailed specifications as well as typical cross sections of the soil strata in these areas are included in the Engineering Design Plans and Specifications presented in Appendix B. Generally, based on analytical data and soil boring logs, it is estimated that between one and 11 feet of clean surface soil are present in these areas.

4.1.2 Institutional control (for entire Cameron Area)

As previously discussed, individual Deed Notices will be prepared for Lots 5 & 6, and a portion of the right-of-way (Proposed Route 22 Connector Road) to prevent the use of the property for residential land use. Each Deed Notice will also include detailed information regarding the constructed engineering controls, identified impacts, and long-term maintenance plans for the engineering controls. Annual inspections will be performed and biennial certifications prepared in accordance with the Technical Regulations.

In addition to the above, ENSR has included in each draft Deed Notice reference to the potential for the vapor intrusion of chlorinated VOCs into structures so future land owners are put on notice of this potential hazard. Further, ENSR proposes to require any surface disturbances across the Cameron Area to be conducted under applicable solid waste regulations or under an approved soil reuse plan by OSHA 40-hour HAZWOPER trained workers. These additional institutional controls will supplement the engineering controls and further protect public health and the environment. These requirements are detailed in the attached Draft Deed Notices in Appendix C.

4.2 Post-remedial monitoring

Post-remedial monitoring of the engineering controls is proposed to consist of yearly inspections and biennial certifications. Detailed monitoring and inspection plans are provided in the Draft Deed Notices included as Appendix C.

4.3 Quality assurance/quality control

ENSR conducts all work at the former Ingersoll Rand facility under a formal Quality Assurance Project Plan (QAPP). The QAPP has been modified to include the proposed activities outlined in section 4.1. The QAPP has been prepared based on the requirements included in N.J.A.C. 7:26E-2.1. A copy of the QAPP for remedial activities to be conducted in Lots 5 and 6 of the Cameron Area is included as Appendix E.

4.4 Soil erosion and sediment control plan

Based on the proposed activities, a Soil Erosion and Sediment Control Plan (SESCP) has been prepared for the excavations and earthwork proposed in the Cameron Area. This plan has already been approved by the Warren County Soil Conservation District and a copy of the approval letter as well as the SESCP is included as Appendix F.

4.5 Site-specific health and safety plan

In accordance with ENSR's Health & Safety Policies, and in compliance with the requirements of N.J.A.C. 7:26E-1.9 and the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operation and Emergency Response Standard (29 CFR 1910.120), ENSR will modify the existing site-specific Health and Safety Plan (HASP) as appropriate prior to the initiation of any field activities. The site-specific HASP will contain the following information:

- Site background and history;
- Scope of field activities;
- Chemical and physical hazard assessment;
- Air monitoring requirements;
- Personal protective equipment requirements;
- Site control and decontamination procedures; and
- Training and medical monitoring requirements.

The finalized HASP will be distributed to all ENSR personnel and subcontractor staff conducting fieldwork on this project. ENSR's first priority is worker health and safety. It is our goal to perform all of our work in a manner that does not result in injuries or illnesses.

A HASP for this work is included in Appendix G.

4.6 Site restoration plan

The final phase of remedial activities to be conducted at the Cameron Area will include site restoration activities before demobilization from the area. Site restoration activities are addressed in greater detail in the Engineering Design Plans and Specifications presented in Appendix B. The site restoration activities, include, but are not limited to the following:

- Meeting the proposed final grades indicated on the engineering drawings will be met to facilitate the restoration of the Cameron Area;
- Applying seed and mulch to the areas that receive a soil cap as detailed in the design specifications included in Appendix B;
- Clearing the municipal roadways of any temporary construction equipment;
- Cleaning the municipal roadways of any residual dust or soil;
- Repairing any breaches in the security fence to insure security measures are maintained around the engineering controls;
- Removal of any temporary signs used for traffic control;
- Removal of temporary soil erosion and sediment control measures that are independent of the establishment of permanent vegetative growth; and
- Repairing any damage to roadway features such as curbing or manhole.

4.7 Permits and approvals

Prior to the implementation of the RAW any required local, State, or Federal permits will be obtained. Based on planned activities along Green Street and Center Street, town approval of remedial activities may be required. As discussed in section 4.4, a Soil Erosion and Sediment Control Plan has already been approved and is included as Appendix F.

4.8 Proposed costs

The estimated cost to complete the remedial activities proposed are summarized in the following table.

REMEDIAL ACTIVITY	**ESTIMATED COST**
Capital Costs	$300,000
Operations and Maintenance	$2,500/yr
Monitoring System	$0
Laboratory	$0
Engineering, Legal, and Administrative	$75,000

Contingency	$15,000
Costs to Date*	$160,000

*Costs to date include investigative activities conducted in 2004 as well as remedial activities previously conducted (estimated).

4.9 Total costs to date

The total costs to date have been estimated based on previous activities in the Cameron Area.

ACTIVITY	**COST**
Tank Removal and Disposal	$12,500
Capital Equipment	$0
Mobilization	$7,500
Consulting and Labor	$25,000
Analytical/Laboratory	$75,000
Sample Collection	$25,000
Disposal	$15,000

4.10 Schedule

Upon NJDEP approval, ENSR will seek Town of Phillipsburg permit approval for work along Center and Green Streets. ENSR will commence implementation of this RAWPA including the proposed limited excavation activities as well as repairing and filling openings in the concrete slab that will comprise the majority of the engineering control. Upon finalization of all remedial activities, a final Remedial Action Report (RAR) will be prepared and submitted with a final Draft Deed Notice, which will be filed with the county and/or town register/clerk upon NJDEP issuance of a No Further Action and Covenant Not to Sue for the soil-related AOCs at the former Cameron Area.

Expected schedule is as follows pending NJDEP approvals and receipt of any necessary permits:

- Submission of RAWPA and updated Draft Deed Notices – March 2007
- Commence excavation – June 2007;
- Commence repair of concrete slabs – July 2007;
- Start installation of soil and remaining remedial measures – June through August 2007;
- Preparation and submittal of final Remedial Action Report and Deed Notice – August - October 2007.

5.0 References

ENSR, 1996, *UST Closure and Site Investigation Report*, October 1996.

ENSR, 2001, *Site Investigation/Remedial Investigation Report of AOC-3a, 3b, 26, 29, 31, and 37*, May 2001.

ENSR, 2002a, *Remedial Investigation Report Addendum for South-Side AOCs*, June 2002.

ENSR, 2002b, *Southside Baseline Ecological Investigation,* July 2002.

ENSR, 2004a, *Baseline Ecological Evaluation*, July 2004.

ENSR, 2004b, *Soil Remedial Investigation Report*, October 2004.

ENSR, 2004c, *Site History Report*, October 2004.

ENSR, 2005a, *Annual Groundwater Monitoring Report*, January 2005.

ENSR, 2005b, *Site Investigation Report, Remedial Investigation Report, and Remedial Action Workplan – Cameron Area of the former Ingersoll Rand Company Facility*, May 2005.

NJDEP, 2005, *Vapor Intrusion Guidance*. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 2005, *Field Sampling Procedures Manual*. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 1993, *Technical Requirements for Site Remediation* (N.J.A.C.7:26E), amended February 3, 2003; July 6, 2004; July 5, 2005. New Jersey Department of Environmental Protection: Trenton, New Jersey

NJDEP, 1994, *Administrative Consent Order in the Matter of the Ingersoll-Rand Site and Ingersoll-Rand Respondent*, amended August 12, 2004. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 1997, Letter Re: UST Closure and Site Investigation Report, New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 2002a, *GPS Data Collection Standards for GIS Data Development*, February 20, 2002. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 2002b, Letter Re: South Side AOC Remedial Investigation Report. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 2002c, *Mapping and Digital Data Standards*, July 1, 2002. New Jersey Department of Environmental Protection: Trenton, New Jersey.

NJDEP, 2004, Letter Re: Baseline Ecological Evaluation Dated July 2004, Site History Report Dated October 11, 2004, and Soil Remedial Investigation Report Dated November 4, 2004. New Jersey Department of Environmental Protection: Trenton, New Jersey

NJDEP, 2005, Letter Re: Soil Reuse Proposal Dated December 2004. New Jersey Department of Environmental Protection: Trenton, New Jersey

Tellus Consultants, 1994a, *Draft Remedial Investigation Work Plan*, June 1994.

Tellus Consultants, 1994b, *Supplemental Draft Remedial Investitgation Work Plan*, June 1994.

USGS, 1981, 7.5-minute Quadrangle Map, Eastern PA-NJ.

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-3A	Storage: Scrap Pad	--	Cameron Outdoor Storage: N of Powerhouse/Approx. 125' N	NFA Granted	NJDEP Letter May 14, 2002
AOC-3B	Storage: Scrap Pad	--	South of Cameron facility buildings	NFA Granted	NJDEP Letter May 14, 2002
AOC-6	Cameron Coolant Disposal Area	VOCs, Metals	Existance Was Never Confirmed	NFA Conditionally Granted	NJDEP Letter October 18, 1994
AOC-8	1,000 gallon Gasoline Tank	TPHC, VOC, Metals	Cameron: NW Corner Bldg 263	NFA Granted - NJDEP Letter January 23, 1997	NJDEP Letter January 23, 1997
AOC-26	2,000-gallon Process Tank	--	Cameron: South Bldg. 254 (certified & removed)	NFA Granted	NJDEP Letters October 18, 1994 and May 14, 2002
AOC-46-1 (Coal Storage Area)	Coal Pocket (1927) and coal trestle (1922)	PAH/BN, Metals	Cameron Outdoor Storage: North Side of Power House	--	November 2004 Site History Report (MD 36 1927; FIA 1922 1180)
AOC-49-1 (Transformer Location)	3 transformers	PCB	Cameron: 12' N of Building 258A N wall: NE corner of area: 12 ft NW of NE corner of Bldg 258A; 194ft NW of NE corner Bldg 253; 275ft NE of junction of Loading Shed and Bldg 252	--	November 2004 Site History Report (FIA1933 1180; un-numbered, 10/12/1956; FIA 1960 698-A)
AOC-49-2 (Transformer Location)	4 100 K.V.A Transformers	PCB	Cameron: NW corner 50ft N of SE corner Bldg 253; 175ft NE of SW corner Bldg 253; 225ft S of NE corner Bldg 253	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-49-3 (Transformer Location)	Transformer Bank	PCB	Cameron: N of Powerhouse to the W of Scrap Pad and 6 ft outside E wall of Bldg 252: S end of area is 125ft NW of NE corner Bldg 251B; 200ft NE of SW corner Bldg 251A; 365ft S of junction of Loading Shed and Bldg 252	--	November 2004 Site History Report (FIA 1960 698-A; Un-numbered Dwg. 2/19/1954)
AOC-49-4 (Transformer Location)	Transformer W Wall 251A	PCB	Cameron: 20ft S of SE corner Bldg 252; 75ft SW of NE corner of 251B; 125ft SE of SW corner of Bldg 252	--	November 2004 Site History Report (FIA 1933 1180; FIA 1960 698-A)
AOC-49-5 (Transformer Location)	Transformer (Later Breaker) NE of Bldg 258	PCB	Cameron: 25ft NE of NE corner Bldg 258; 240ft NE of junction of Loading Shed and Bldg 252; 712 ft NW of NE corner Bldg 251B	--	November 2004 Site History Report (FIA 1933 1180; FIA 1960 698-A)
AOC-49-6 (Transformer Location)	Interior Switch Boxes & Capacitors in Bldg 252 (16)	PCB	Cameron: Along center line of Building 252 and other unknown locations	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954)
AOC-49-7 (Transformer Location)	Transformer in 251A	PCB	Cameron: 6ft N of S wall of Bldg 251A: 30 ft W of SE corner Bldg 251B; 25ft E of SW corner Bldg 251A; 87 ft NE of NE corner Bldg 251B	--	November 2004 Site History Report (FIA 1960 698-A)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-49-58 (Transformer Location)	1 transformer	PCB	Cameron: NE wall of Bldg 253, 37ft from SE corner Building 253	--	November 2004 Site History Report (MD 3454 1970)
AOC-49-59 (Transformer Location)	6 transformers in Sub 4	PCB	Cameron Building 254: East of Bldg 254 at the SW corner of the open area E bordering the northern part of Bldg 254	--	November 2004 Site History Report (MD 3453 1970)
AOC-49-62 (Transformer Location)	4 transformer in Substation 3	PCB	Cameron E wall Bldg 252: Sub 3: 375ft NW of 251B SE corner; 475ft SW of Bldg 258 NE corner; 375ft SW of Bldg 253 NE corner	--	November 2004 Site History Report (MD 2781 1970)
AOC-49-66 (Transformer Location)	75KVA transformers (5)	PCB	Cameron Outdoor Area: located south of the Loading Shed between Buildings 252 and 253; NE corner of area is 75ft NE of junction of Loading Shed and Bldg 252; 560ft N of SE corner of 251B; 550 ft NE of SW corner of 253.	--	November 2004 Site History Report (FIA 1933 1180; FIA 1960 698-A)
AOC-49-115 (Transformer Location)	250KVA transformer	PCB	Cameron Building #251A (interior)	--	PCB Transformer Listing, September 9, 1985
AOC-49-117 (Transformer Location)	2 PCB containing line capacitors	PCB	Cameron Building #262 (interior)	--	PCB Transformer and Capacitor List (Undated)
AOC-50-9 (Dry Wells, Cesspools, Pits, & Leach Fields)	Sump and Dry Well	--	Cameron: S of Bldg 251, approximately 75 ft due S of SW corner of Bldg 251A	--	November 2004 Site History Report (MD 1700 1960)
AOC-52-1 (Building Sump, Pit, Floor Drain, Etc.) †	Existing Trench	--	Cameron Building 258	--	November 2004 Site History Report (MD 2606 1965)
AOC-52-2 (Building Sump, Pit, Floor Drain, Etc.) †	Proposed Trench for HP Test loop (pipe extension)	--	Cameron Building 258	--	November 2004 Site History Report (MD 2606 1965)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-52-3 (Building Sump, Pit, Floor Drain, Etc.) †	6" Floor Drain, 3 pit drains, concrete gutter on North wall	--	Cameron Building 258: Along east wall and north wall	--	November 2004 Site History Report (MD 1700 1960)
AOC-52-4 (Building Sump, Pit, Floor Drain, Etc.) †	Sump Pit with 6' Terra Cotta Drain	--	Cameron Building 263	--	November 2004 Site History Report (MD 1652 1948)
AOC-52-5 (Building Sump, Pit, Floor Drain, Etc.) †	Sump by Tank	--	Cameron Gas Pump Testing Building (possibly Building 258): outside middle of tank	--	November 2004 Site History Report (MD 1652 1948)
AOC-52-9 (Building Sump, Pit, Floor Drain, Etc.) †	Drain	--	Cameron Gasoline Pump Test Building (possibly Building 258): under outside edge of tank / towards corner of the building	--	November 2004 Site History Report (MD 1652 1948)
AOC-52-41 (Building Sump, Pit, Floor Drain, Etc.) †	Man Hole connection to catch basin	--	Cameron Outdoor Area: between center street and Building 258	--	November 2004 Site History Report (MD 2606 1965)
AOC-53-8 (Subsurface Utilities) (1) †	Subway & Subsurface utilities	--	Cameron Subway: Runs from NW corner of Building 252 to SW corner of Building 259	--	November 2004 Site History Report (MD 1700 1960)
AOC-54-3 (UST/AST Location)	Possible tank labeled "C-4"	--	Cameron Outdoor Area: 115' SE of Building 254, 200' NW of Building 251, 60' NE of Building 252	--	November 2004 Site History Report (MD 3525 1981)
AOC-54-13 (UST/AST Location)	Possible tank labeled "C-5"	--	Cameron Outdoor Area: 140' SW of Building 251, 35' S Building 252 S corner; 10' E of Bldg 255	--	November 2004 Site History Report (MD 3525 1981)
AOC-54-27 (UST/AST Location)	Underground oil tanks (3) labeled "C-3"	TPHC	Cameron outdoor area: 80' NE of Building 264, 325' E of Building 257's NE corner; 200' E of gate 22	--	November 2004 Site History Report (MD 3525 1981)
AOC-54-31 (UST/AST Location)	AST #2 Fuel Oil	TPHC	Cameron Building 251: outside the southern wall of Building 251B (Engine House), close to the wall with 251A.	--	November 2004 Site History Report (MD 3206 1977)
AOC-54-32 (UST/AST Location)	2 tanks (not specified AST/UST)	--	Cameron Building 251A and 251B: in the Boiler Rooms Level shop floor of boiler room	--	November 2004 Site History Report (Un-numbered Power Dept. Dwg. 5/3/1929; MD 476 1929)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-54-33 (UST/AST Location)	Oxygen tank	--	Cameron Building 251A: No directions marked on the drawing. Surmised location: against the southern wall for 12 feet, starting five feet away from the southwest corner.	--	November 2004 Site History Report (Un-numbered Dwg. 2/6/78)
AOC-54-34 (UST/AST Location)	AST Mec gas	--	Cameron Building 255: east (and outside) of Building 255 and west of Building 252's SW corner.	--	November 2004 Site History Report (MD 3206 1977; MD 3525 1981)
AOC-54-35 (UST/AST Location)	Possible Dye Penetrating Tanks (4)	--	Cameron Building 262: South of Magna Flux and magnus machines on west wall	--	November 2004 Site History Report
AOC-54-36 (UST/AST Location)	Possible (2) Magna Flux Machines	--	Cameron Building 262: Store room, South of Dye Pent. Machine on west wall	--	November 2004 Site History Report
AOC-54-38 (UST/AST Location)	Tank	--	Cameron Building 258 (outside): off the North corner of building 258.	--	November 2004 Site History Report (MD 3525 1981)
AOC-54-40 (UST/AST Location)	1 tank (unknown if AST or UST)	--	Cameron Building 264: one oil tank located within building 264.	--	November 2004 Site History Report (MD 3525 1981)
AOC-54-41 (UST/AST Location)	Air Tank	--	Cameron Exterior Air Tank: North Side of Power House	--	November 2004 Site History Report (MD 436 1927; FIA 1933 1180)
AOC-54-42 (UST/AST Location)	Dye Penetrant tanks (2)	--	Cameron Loading Shed (between Building 253 and 252): running along the north-south central axis of the building. More precise information is not available.	--	November 2004 Site History Report (MD 3266 1978)
AOC-54-43 (UST/AST Location)	Magnaflux Tank	--	Cameron Loading Shed (between Building 253 and 252): running along the north-south central axis of the building. South of the dye penetrant tanks. More precise information is not available.	--	November 2004 Site History Report (MD 3266 1978)
AOC-54-45 (UST/AST Location)	500 gal Fuel Oil Tank(AST)	TPHC	Cameron Outdoor AST: Along Building 252's exterior wall, 20 feet W of SW corner of 252 and 50 feet NW of SW corner of Building 251A.	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-54-46 (UST/AST Location)	Supply tank	--	Cameron Outdoor Storage Bins: Old storage bins by building 255	--	November 2004 Site History Report (MD 3509 1981)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-54-47 (UST/AST Location)	2 Suction Tanks	--	Cameron Test Pit Lean to (surmised): Located in Oil Pump Test Pit (unknown location in building). Next to Transfer pump. Both connected to Suction Pit.	--	November 2004 Site History Report (MD 578 1930)
AOC-54-48 (UST/AST Location)	Possible Magnus Cleaning Tank	--	Cameron Building 262: 84' South of Wash machine	--	November 2004 Site History Report
AOC-54-149 (UST/AST Location)	2 Tanks (Possible ASTs)	--	Cameron Outdoor Area: approx. 299' south of Bldg. 11 SW corner at corner in road S of Bldg. 11	--	November 2004 Site History Report (un-numbered un-dated dwg "Ingersoll-Rand Plant")
AOC-54-154 (UST/AST Location)	Separator	TPHC	Cameron Test Pit Lean to: Connected to steam line	--	November 2004 Site History Report (MD 578 1930)
AOC-55 (Rail Lines) [2]	Rail Road Tracks	PAH/BN, Metals	Throughout Cameron outdoor areas	--	November 2004 Site History Report (FIA 1922 1180)
AOC-57-1(Boilers, Ovens, Furnaces, & Incinerators)	Cameron Boiler Room	--	Cameron Building 251A	--	November 2004 Site History Report (FIA 1922 1180)
AOC-57-2 (Boilers, Ovens, Furnaces, & Incinerators)	preheat furnace	--	Cameron Building 252: Sheds along Building 252's southern wall	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-57-3 (Boilers, Ovens, Furnaces, & Incinerators)	gas heat treating furnaces	--	Cameron Building 252: southern part of building	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-58 (Fill) [3]	FILL	PAH/BN, Metals	Cameron facility	--	November 2004 Site History Report
AOC-59-1 (Roof Vents & Roof Drains) [4]	Stack	--	Cameron Power House: North Side of Power House	--	November 2004 Site History Report (FIA 1922 1180)
AOC-60-1 (Scrap Pad, Storage Area, or Process Area)	Process Area: Maintenance Department	--	Cameron Building 251A (former Boiler Room)	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-60-2 (Scrap Pad, Storage Area, or Process Area)	Pit: Possibly two flywheel pits filled in below motor generators in the basement of Old Engine room	--	Cameron Building 251A: Engine room Basement	--	November 2004 Site History Report (B-HR5-5 1929)
AOC-60-3 (Scrap Pad, Storage Area, or Process Area)	Storage: Mapp Gas manifold and Gas Bottle storage	--	Cameron Building 251A: No directions marked on the drawing. Surmised location: Southwestern wall of Building 251A, abutting the wall for 33 feet north and three feet outside the wall.	--	November 2004 Site History Report (Un-numbered Dwg. 2/6/78)
AOC-60-4 (Scrap Pad, Storage Area, or Process Area)	Pit: Hydro Test Pit	--	Cameron Building 252: North Center of Building 252	--	November 2004 Site History Report (MD 1700 1960)
AOC-60-5 (Scrap Pad, Storage Area, or Process Area)	Process Area: Pickling Shed	Metals	Cameron Building 252: northwest side	--	November 2004 Site History Report (MD 436 1927; FIA 1933 1180)
AOC-60-6 (Scrap Pad, Storage Area, or Process Area)	Process Area: Babbit room	Metals	Cameron Building 252: southern wall, southeast area of building, west of Building 251.	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954)
AOC-60-7 (Scrap Pad, Storage Area, or Process Area)	Process Area: Sand Blast	Metals	Cameron Building 252: southwest corner	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954; FIA 1960 698-A)
AOC-60-8 (Scrap Pad, Storage Area, or Process Area)	Process Area: Possible Paint Spraying	VOC	Cameron Building 253: east of 5 KVA transformers	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-9 (Scrap Pad, Storage Area, or Process Area)	Loading: Truck passage dock	--	Cameron Building 253: North side of Building 253	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954)
AOC-60-10 (Scrap Pad, Storage Area, or Process Area)	Loading: Truck Dock	--	Cameron Building 253: southeast corner	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-11 (Scrap Pad, Storage Area, or Process Area)	Process Area: Possible Paint Booths (2)	VOCs, Metals	Cameron Building 257 and Loading Shed: Southeast section of Bldg 257 along the wall with the loading shed, and in the Loading Shed just south of Bldg 257	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954; FIA 1960 698-A)
AOC-60-13 (Scrap Pad, Storage Area, or Process Area)	Pit: Test pits	--	Cameron Building 258	--	November 2004 Site History Report (MD 591-A 1929; FIA 1960 698-A)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-60-14 (Scrap Pad, Storage Area, or Process Area)	Pit: Sink Hole	--	Cameron Building 258 (Test Pit Lean-To): In one of the test pits on east side of Bldg 258 (estimated)	--	November 2004 Site History Report (MD 578 1930)
AOC-60-16 (Scrap Pad, Storage Area, or Process Area)	Storage: Steel Storage	--	Cameron Building 261: southern shed in Building 261 complex	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-17 (Scrap Pad, Storage Area, or Process Area)	Storage: Parts Storage Sheds	--	Cameron Building 261:northern area of the complex (est)	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-18 (Scrap Pad, Storage Area, or Process Area)	Process Area: Acetylene tempering	--	Cameron Building 261:southern area of Building 261 complex (est)	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-19 (Scrap Pad, Storage Area, or Process Area)	Loading: Loading Shed	--	Cameron Loading Shed: S of Erector Building & N of transformers	--	November 2004 Site History Report (FIA 1933 1180)
AOC-60-21 (Scrap Pad, Storage Area, or Process Area)	Process Area: Paint Storage	VOC, Metals	Cameron Outdoor Area: Shed along northwest side of Building 252	--	November 2004 Site History Report (MD 436 1927)
AOC-60-22 (Scrap Pad, Storage Area, or Process Area)	Storage: Auto Storage	--	Cameron Outdoor Area: East of Green St. & Alley	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-23 (Scrap Pad, Storage Area, or Process Area)	Storage: Brass storage	--	Cameron Outdoor Shed: Northwest of pickling shed, along western wall of Building 252. Northeast corner of storage shed was about 120 feet from the northwest corner of Building 252, and 45 feet from the western wall.	--	November 2004 Site History Report (MD 436 1927)
AOC-60-24 (Scrap Pad, Storage Area, or Process Area)	Storage: Bins	--	Cameron Outdoor Storage: East wall of Building 253 125' N of transformer	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-26 (Scrap Pad, Storage Area, or Process Area)	Storage: Bins	--	Cameron Outdoor Storage: North of Paint Storage on west side of Building 252	--	November 2004 Site History Report (MD 436 1927; FIA 1180 1933)
AOC-60-27 (Scrap Pad, Storage Area, or Process Area)	Storage: Steel Stock	--	Cameron Outdoor Storage: Outside Southcentral end of Building 252	--	November 2004 Site History Report (FIA 1180 1933)
AOC-60-28 (Scrap Pad, Storage Area, or Process Area)	Storage: Concrete Scrap Pad	--	Cameron Outdoor Storage: West of Brass Storage Area	--	November 2004 Site History Report (MD 436 1927)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-60-29 (Scrap Pad, Storage Area, or Process Area)	Storage: Storage Iron Castings	--	Cameron Outdoor Tracks: In between 2 RR tracks on South side of main Cameron building (Building 252)	--	November 2004 Site History Report (FIA 1922 1180; FIA 1960 698-A)
AOC-60-30 (Scrap Pad, Storage Area, or Process Area)	Process Area: Spray Shed (cannot locate drawing)	VOC	Cameron Spray Shed: West of babbit room	--	November 2004 Site History Report (Un-numbered Dwg. 2/19/1954)
AOC-60-31 (Scrap Pad, Storage Area, or Process Area)	Process Area: Heat Treating Room	--	Cameron West of Building 252: exterior shed, western wall of Building 252, north of 20' x 185' storage shed	--	November 2004 Site History Report (FIA 1180 1933)
AOC-60-32 (Scrap Pad, Storage Area, or Process Area)	Process Area: Dye penetrating area with exhausters	--	Cameron: Between Buildings 254 and 257	--	November 2004 Site History Report (MD 3266 1978)
AOC-60-33 (Scrap Pad, Storage Area, or Process Area)	Process Area: Coolant Recovery unit area	TPHC, VOC, Metals	Cameron: Old storage bins by building 255	--	November 2004 Site History Report (MD 3509 1981)
AOC-60-133 (Scrap Pad, Storage Area, or Process Area)	Storage: Scrap Bin	--	Cameron Outdoor Shed: NW ext side Building 252, 175' S of NW corner of the bldg, c. 25' from W wall	--	November 2004 Site History Report (FIA 1922 1180)
AOC-60-134 (Scrap Pad, Storage Area, or Process Area)	Process Area: Sand Blast Room	Metals	Cameron Area: NW of small casting Storage shed	--	November 2004 Site History Report (FIA 1922 1180)
AOC-60-136 (Scrap Pad, Storage Area, or Process Area)	Storage: Small Castings Storage shed	--	Cameron: NW ext side Bldg 252, 300' S of NW corner of bldg, c. 225' from W wall	--	November 2004 Site History Report (FIA 1922 1180)
AOC-60-151 (Scrap Pad, Storage Area, or Process Area)	Process Area: Gas Meter House	--	Cameron: 175ft W of Bldg 252; 260ft S of Bldg 259	--	November 2004 Site History Report (FIA 1933 1180)
AOC-60-154 (Scrap Pad, Storage Area, or Process Area)	Process Area: Casting & Cleaning Shed	--	Cameron Bldg 252: along W wall of Bldg 252	--	November 2004 Site History Report (FIA 1933 1180)
AOC-60-160 (Scrap Pad, Storage Area, or Process Area)	Storage: Stock Room	--	Cameron Building 261: East of 1953 addition	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-166 (Scrap Pad, Storage Area, or Process Area)	Storage: Storage Building Pumps and Pump Bases with paint vault	--	Cameron Bldg 261: North of 1953 addition to Bldg 261	--	November 2004 Site History Report (FIA 1960 698-A)

TABLE 1
Summary of Areas of Concern (AOCs)
Cameron Area
Lots 5 6 RAWPA
Former Ingersoll Rand Facility - Phillipsburg, New Jersey

AOC ID	AOC Descrption	KNOWN or POSSIBLE COCs	LOCATION	NFA STATUS	REFERENCE
AOC-60-167 (Scrap Pad, Storage Area, or Process Area)	Storage: Brass Casting Shed	--	Cameron Building 252: North of Casting & Cleaning Shed along NW end of Bldg 252	--	November 2004 Site History Report (FIA 1933 1180)
AOC-60-170 (Scrap Pad, Storage Area, or Process Area)	Process Area: Chipping Room	--	Cameron: NW of small casting Storage shed	--	November 2004 Site History Report (FIA 1922 1180)
AOC-60-176 (Scrap Pad, Storage Area, or Process Area)	Process Area: Gas Engine Test Building (#263)	TPHC, VOC, Metals	Cameron Building #263: west of 1953 additions south of Gas meter pit	--	November 2004 Site History Report (FIA 1960 698-A)
AOC-60-206 (Scrap Pad, Storage Area, or Process Area)	Pit: Pit on south side of Building 252	--	Cameron Building 252: Pit in center of south side of Building 252 Floored over	--	November 2004 Site History Report (MD 1700 1960)

Notes:

(1) It is assumed that subsurface utilities were present both connecting the Cameron area to the remainder of the facility and connecting Cameron buildings

(2) Rail lines were present throughout much of the Cameron area, as shown on Figure 2

(3) Fillis present throughout much of the former Cameron area, as shown on Figure 2

(4) It is assumed that a roof vent and roof drain system existed for every former building

† - AOC is not shown on Figure 2a

AOC = Area of Concern

COC = Contaminant of Concern

N/A = Not Applicable

NFA = No Further Action

NJDEP = New Jersey Department of Environmental Protection

VOC = Volatile Organic Compound

BN = Base Neutral Organic Compound

PAH = Polycyclic Aromatic Hydrocarbons

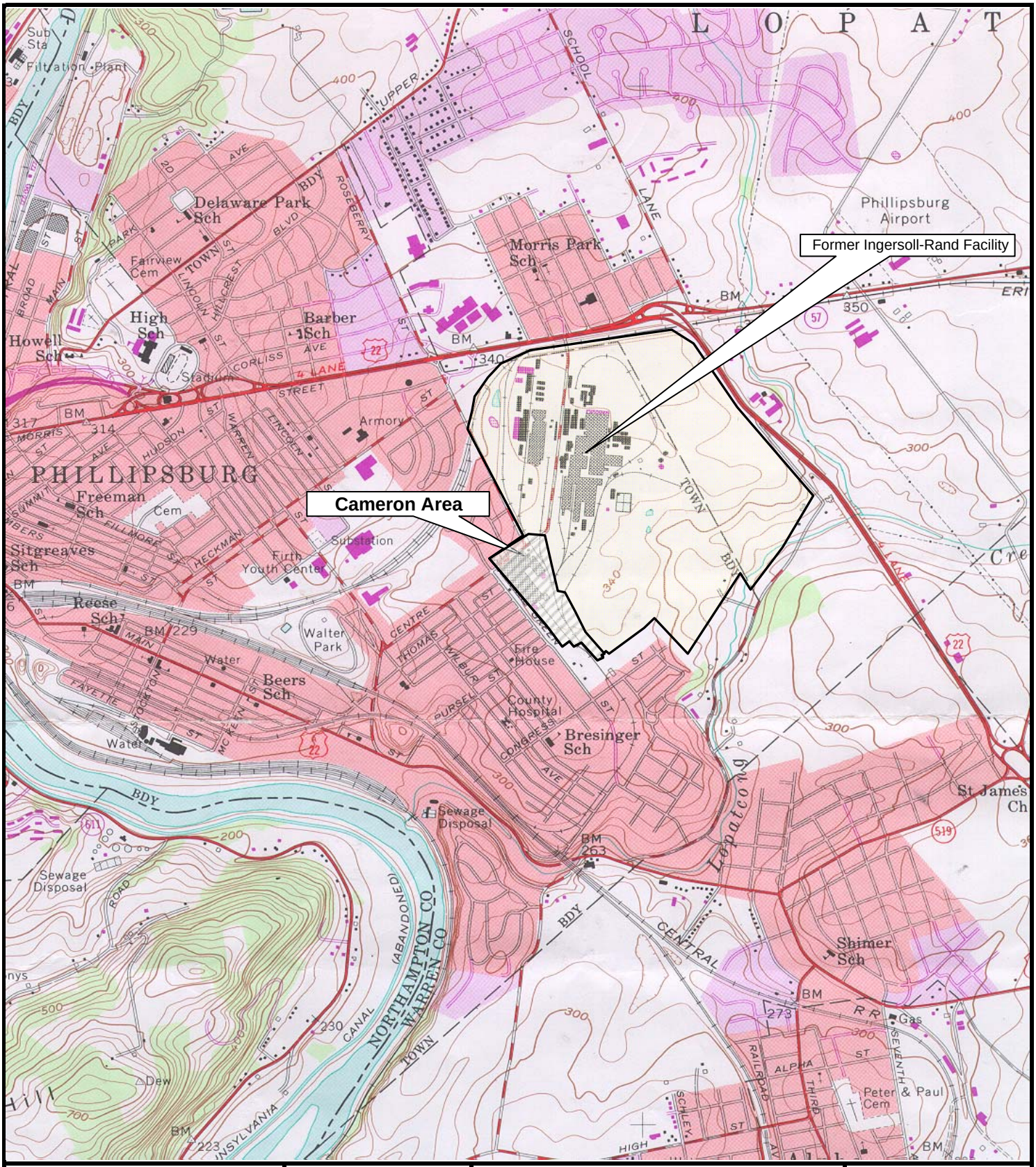
PCB = Polychlorinated Biphenyls

TPHC = Total Petroleum Hydrocarbons

Table 2
Summary of Remedial Activities and Protectiveness
Cameron Area - Lots 5 and 6 RAWPA
Former Ingersoll Rand Facility
Phillipsburg, NJ

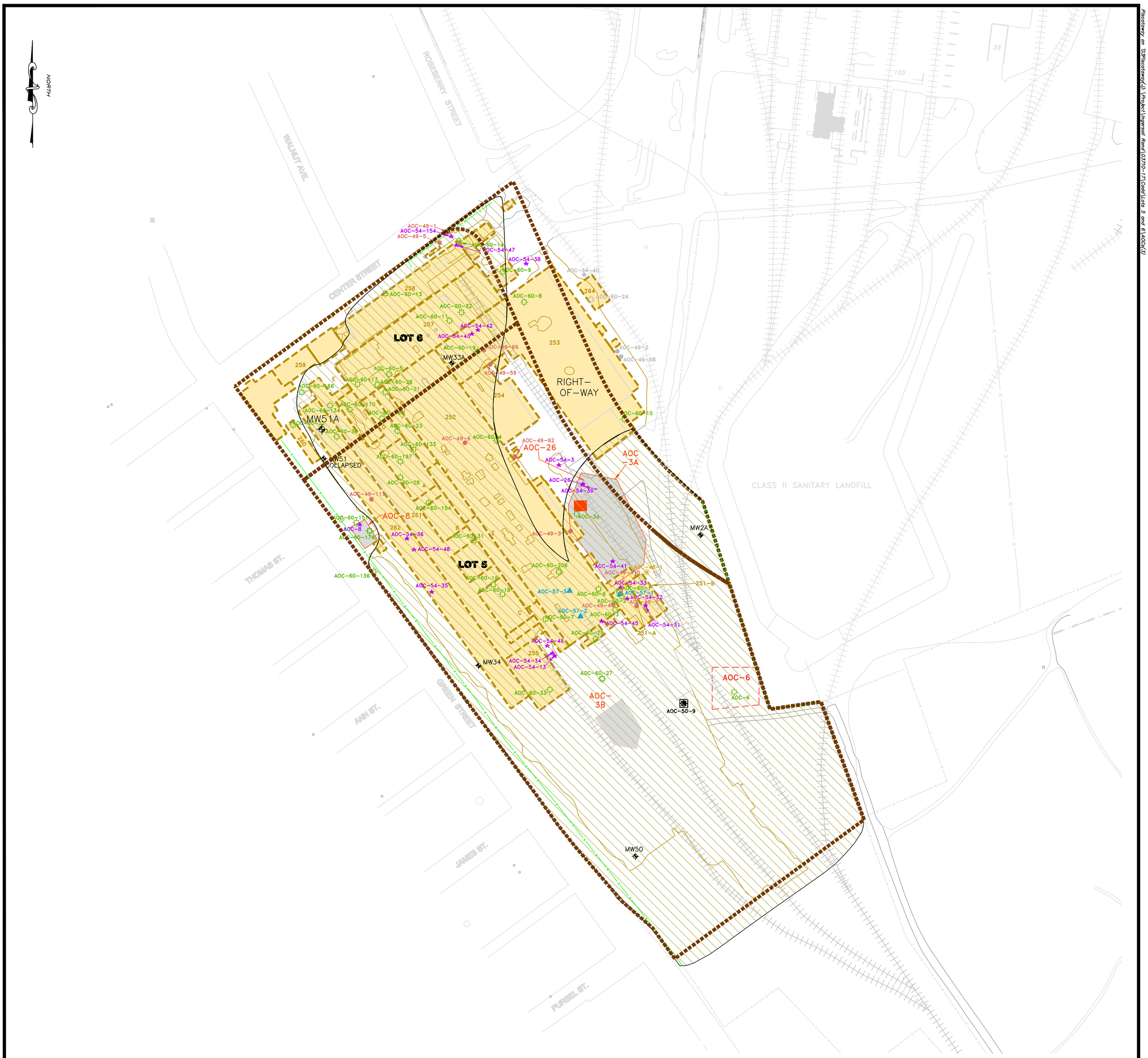
Engineering Control (EC)	Proposed Engineering Control	Description of Protectiveness Achieved	Protectiveness Summary		
			Direct Dermal Contact	Ingestion	Inhalation
1	Existing Concrete/Asphalt Cap	A minimum 6-inch thick physical barrier which will prevent direct contact, ingestion, and inhalation of impacted soils present below.	☑	☑	☑
2	Repair of Breaches in Concrete	A minimum 6-inch thick physical barrier which will prevent direct contact, ingestion, and inhalation of impacted soils present below.	☑	☑	☑
3	Soil/Vegetative Cap	Will provide a physical barrier that will prevent direct contact, ingestion, and inhalation exposure pathways for impacted soil below the control.	☑	☑	☑
4	Geotextile and Rip Rap Cap	Will provide a physical barrier to reduce the possibility of direct contact, ingestion or inhalation of impacted soils below the geotextile.	☑	☑	☑
5	Limited Hot Spot Excavation	Direct removal of soil will prevent direct contact, ingestion and inhalation of impacted soils. When excavation is combined with EC6 (below) along with permanent fencing, this combination of physical barriers will limit the potential for exposure through direct contact, ingestion, or inhalation.	☑	☑	☑
6	Existing Surface Cover Cap	This physical barrier is an engineering control and will prevent direct contact, ingestion, and inhalation of identified impacts in subsurface soil.	☑	☑	☑

Notes:
Engineering Controls in this table correspond to those shown on Figure 4 Cameron Area Remedial Action Map for Lots 5 & 6 and discussed in Sections 3.2 and 4.1 of the Remedial Action Workplan Addendum (RAWPA) Report.



Source: USGS 7.5' Topographic Quadrangle - Easton, NJ-PA 1954 - Photorevised 1981	Client: **Ingersoll Rand Company** Design/Review: GM/CV Scale: 1:24,000 Date: 3/07	**FIGURE 1** **USGS Site Location Map** Cameron Area RAWPA Fmr. Ingersoll Rand Facility Phillipsburg, NJ	ENSR | AECOM
		Project No.: 03710-176	

J:\Project\Ingersoll Rand\03710-176\ACO\Cameron\Lots 5&6 RAWPA\Figures\ACO\Cameron RA\RAWPA\Figures\Fig1-SiteLocCameron.xls



LOCATION REFERENCE MAP

800 400 0 800
Scale in Feet

Legend

- 259 — FORMER BUILDING & ID NUMBER
- FENCELINE
- CAMERON AREA BOUNDARY
- LOCATION HAS BEEN EXCAVATED

AREAS OF CONCERN

- FORMER COAL STORAGE AREA (AOC-46)
- FORMER TRANSFORMER LOCATION (AOC-49)
- FORMER DRYWELLS/SEPTIC SYSTEMS/CESSPOOLS (AOC-50)
- FORMER LOCATION OF AST AND/OR UST (AOC-54)
- APPROXIMATE LOCATION OF FORMER RAILROAD (AOC-55). FORMER RAILWAYS MAY OR MAY NOT BE OBSERVABLE AT THE SURFACE.
- FORMER FURNACE LOCATION (AOC-57)
- APPROXIMATE FILL AREA (AOC-58)
- FORMER SCRAP PAD, STORAGE AREA, AND PROCESS AREA (AOC-60)
- AREA OF CONCERN (AOC) WITH NFA (SEE NOTE 3)

Notes:

1. PROPERTY LINES SHOWN HEREON ARE BASED ON A DRAWING ENTITLED "SURVEY OF LANDS FOR INGERSOLL – RAND CO.," PREPARED BY STUDER & McELDOWNEY, P.A., DRAWING NO. 1590-G, DATED AUGUST 15, 2003.
2. AOC LOCATIONS/BOUNDARIES ARE APPROXIMATE.
3. AREAS OF CONCERN WITH NJDEP CONCURRENCE OF NFA ARE:
   - AOC-3A FORMER CHIP STORAGE PAD
   - AOC-3B FORMER CHIP STORAGE PAD
   - AOC-8 FORMER 1,000-GALLON GASOLINE UST (REMOVED 1996)
   - AOC-6 CAMERON COOLANT DISPOSAL AREA (LOCATION NEVER CONFIRMED)
   - AOC-26 FORMER 2,000-GALLON WASTE OIL UST (REMOVED 1985)
4. BUILDING SUMPS, PITS AND FLOOR DRAINS (AOC-52) AND SUBSURFACE UTILITIES (AOC-53) WERE ASSUMED PRESENT AT OR NEAR ALL FORMER BUILDINGS AND ARE NOT PRESENTED ON THIS MAP.

100 50 0 100
Scale in Feet

SHEET NUMBER: 1 of 1

FIGURE NUMBER: 2

LOTS 5 AND 6
SITE PLAN WITH AREAS OF CONCERN
FORMER INGERSOLL RAND COMPANY FACILITY
PHILLIPSBURG, NEW JERSEY

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	03/08/07	03710-176

ENSR | AECOM
ENSR CORPORATION
20 NEW ENGLAND AVENUE
PISCATAWAY, NEW JERSEY 08854
PHONE: (732) 981-0200
FAX: (732) 981-0116
WEB: HTTP://WWW.ENSR.AECOM.COM

DESIGNED BY:	REVISIONS			
GM	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY: /JK/LC				
CHECKED BY:				
APPROVED BY:				

J:\Project\Ingersoll Rand\03710-176\CADD\Lots 5 and 6\AOCs(3).dwg

Piscataway on \\ENSPiscataway(J):\Project\Ingersoll Rand\03710-17\Cadd\Lots 5 and 6\AOCs(3)

NORTH

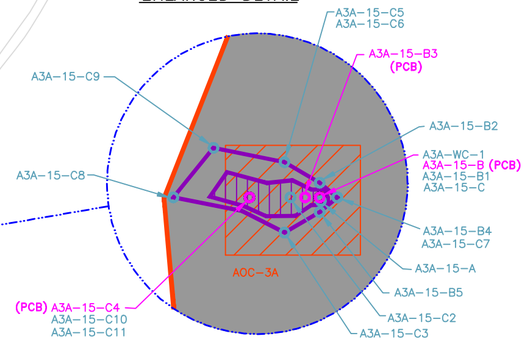
ROSEBERRY STREET
WALNUT AVE.
CENTER STREET
THOMAS ST.
GREEN STREET
ANN ST.
JAMES ST.
PURSEL ST.
LOT 6
LOT 5
LOT 4.01
RIGHT-OF-WAY
105
55

AOC-26
AOC 3A
AOC-8
AOC 3B

C01 (PCB)
C02 (PAH)
C03
C04 (PAH)
C05 (PAH)
C06
C07
C08
C10
C11
C12
C16
C17
C18
C19 (AS,CU)
C20 (CU,PCB)
C21
C23
C24
C25
C26 (AS)
C27 (PAH)
C28
C29 (PAH)
C31
C32
C33
C34 (PAH)
C35
C36 (PAH)
C37
C38
C39
C40
C41 (PAH)
C43
C44 (AS)
C45 (AS,PAH)
C46
C47
C48
C49
C52 (AS)
C55 (PAH)
C57 (PAH)
C58
C59
C60
C61
C62 (PCB)
C63
C64
C65
C67
C68
C69 (PAH)

A26-4-A
A26-3-A
A26-2-A
A26-1-A
A26-1-A1
A3A-7-A
A3A-1-A1
A3A-1-A
A3A-9-A
A3A-3-A
A3A-5-A
A3A-11-A
A3A-13-A
A3A-19-A
A3A-23-
A3A-17-A
A3A-25-A1
A3A-25-A
A3A-27-A1
A3A-27-A2
A3A-27-A
A3B-7-A
A3B-7-A1
A3B-9-A
A3B-3-A
A3B-5-A
A3B-11-A

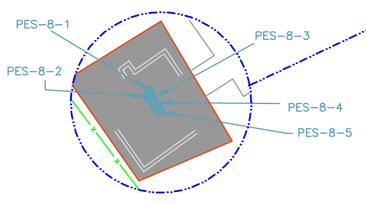
AOC-3A ENLARGED DETAIL



20 10 0 20
Scale in Feet

EXCAVATION OF THIS AREA WAS COMPLETED IN 2001.

AOC-8 ENLARGED DETAIL



34 17 0 34
Scale in Feet

Legend

- SOIL SI/RI SAMPLE
- FORMER SOIL SAMPLE LOCATION

ABOVE SAMPLES COLOR CODED TO INDICATE ANALYTICAL RESULTS:

- SAMPLE EXCEEDS THE NRDCSCC FOR ANALYTE IN PARENTHESES
- SAMPLE DOES NOT EXCEED THE NRDCSCC
- CAMERON AREA BOUNDARY
- FENCELINE
- ESTIMATED EXTENT OF IMPACT FOR SELECT METALS ABOVE THE NRDCSCC
- ESTIMATED EXTENT OF IMPACT FOR PAHs ABOVE THE NRDCSCC
- ESTIMATED EXTENT OF IMPACT FOR PCBs ABOVE THE NRDCSCC
- DELINEATION BOUNDARY TO CLEAN SAMPLE POINTS TO BELOW THE NRDCSCC FOR SELECT METALS
- DELINEATION BOUNDARY TO CLEAN SAMPLE POINTS TO BELOW THE NRDCSCC FOR PAHs
- DELINEATION BOUNDARY TO CLEAN SAMPLE POINTS TO BELOW THE NRDCSCC FOR PCBs

Notes:

1. PROPERTY LINES SHOWN HEREON ARE BASED ON A DRAWING ENTITLED "SURVEY OF LANDS FOR INGERSOLL – RAND CO.," PREPARED BY STUDER & McELDOWNEY, P.A., DRAWING NO. 1590–G, DATED AUGUST 15, 2003.
2. AS – ARSENIC
   CU – COPPER
   PB – LEAD
   PAH – POLYCYCLIC AROMATIC HYDROCARBONS
   PCB – POLYCHLORINATED BIPHENYLS
   NRDCSCC – NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION NON–RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA

100 50 0 100
Scale in Feet

SHEET NUMBER: 1 of 1

FIGURE NUMBER: 3

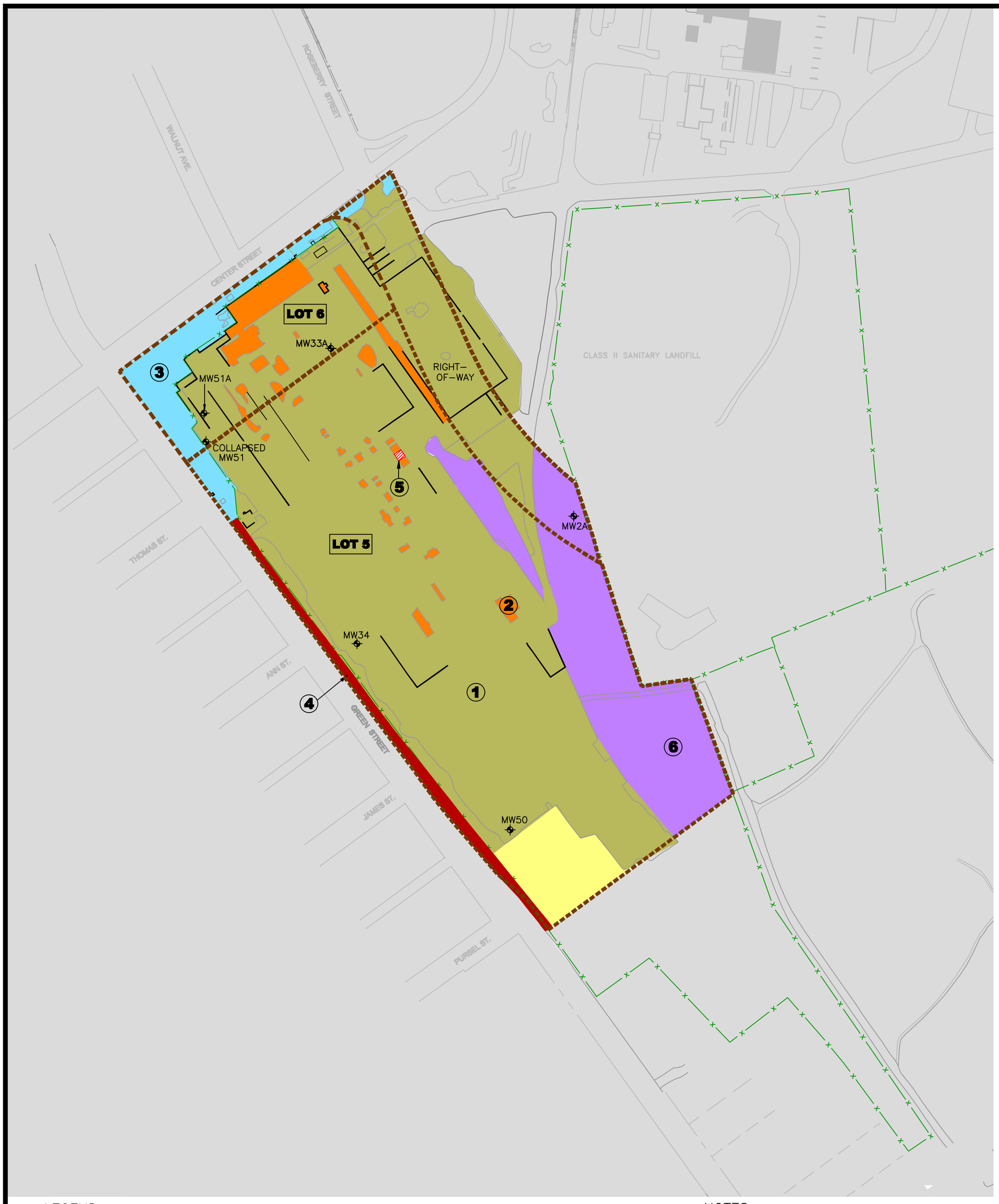
LOTS 5 AND 6 - DELINEATION MAP

FORMER INGERSOLL RAND COMPANY FACILITY
PHILLIPSBURG, NEW JERSEY

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	03/08/07	03710–176

ENSR | AECOM
ENSR CORPORATION
20 NEW ENGLAND AVENUE
PISCATAWAY, NEW JERSEY 08854
PHONE: (732) 981–0200
FAX: (732) 981–0116
WEB: HTTP://WWW.ENSR.AECOM.COM

DESIGNED BY:	REVISIONS			
GM	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
\JK\LC				
CHECKED BY:				
APPROVED BY:				



LEGEND

EC#		
1		EXISTING CONCRETE/ASPHALT CAP
2		AREAS OF CONCRETE CAP REQUIRING REPAIR OR ADDITION
3		SOIL/VEGETATIVE CAP
4		GEOTEXTILE AND RIPRAP CAP
5		LIMITED EXCAVATION (EXCAVATIONS MAY NOT BE TO SCALE)
6		EXISTING SURFACE COVER CAP

- MONITORING WELL LOCATION
- DEED NOTICE AREA INDICATED BY INDIVIDUAL LOT BOUNDARIES
- EXISTING FENCELINE
- NO AOCS OR IMPACTS IDENTIFIED IN THIS AREA

150 75 0 150
Approximate Scale in Feet

NOTES:

1. PROPERTY LINES SHOWN HEREON ARE BASED ON A DRAWING ENTITLED "SURVEY OF LANDS FOR INGERSOLL – RAND CO.," PREPARED BY STUDER & McELDOWNEY, P.A., DRAWING NO. 1590–G, DATED AUGUST 15, 2003; AND ON A DRAWING ENTITLED "SURVEY OF LANDS FOR INGERSOLL – RAND COMPANY," PREPARED BY STUDER & McELDOWNEY, P.A., DRAWING NO. 1147–G, DATED FEBRUARY 7, 1992, LAST REVISED JUNE 15, 1992.

2. TOWNSHIP OF PHILLIPSBURG: TAX MAP SHEET 32, BLOCK 3201, LOT 7 AND TAX MAP SHEET 33, BLOCK 3301, LOTS 1, 2 & 4

3. PROGRAM INTEREST NAME AND NUMBER (PREFERRED ID): OFFICE OF BROWNFIELD REUSE; ISRA CASE NO. 2004306

4. LOCATIONS OF ENGINEERING CONTROLS (I.E., EXISTING IMPERMEABLE CAP, SUPPLEMENTAL IMPERMEABLE CAP, SOIL/VEGETATIVE CAP, GEOTEXTILE AND RIPRAP CAP, OR EXCAVATIONS) ARE APPROXIMATE.

5. THE ENGINEERING CONTROL AREAS INVOLVING EXCAVATION AND 6" SOIL CAP WILL ALSO INCORPORATE FENCING AROUND THE PROPERTY BOUNDARY.

EXHIBIT NUMBER: 4
SHEET NUMBER: 1 of 1

LOTS 5 AND 6 REMEDIAL ACTION CONCEPT MAP

FORMER INGERSOLL RAND COMPANY FACILITY, PHILLIPSBURG, NEW JERSEY

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	02/26/07	03710–176

ENSR | AECOM
ENSR CORPORATION
20 NEW ENGLAND AVENUE
PISCATAWAY, NEW JERSEY 08854
PHONE: (732) 981–0200
FAX: (732) 981–0116
WEB: HTTP://WWW.ENSR.AECOM.COM

DESIGNED BY:		REVISIONS		
	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY: \JK\LC				
CHECKED BY:				
APPROVED BY:				

J:\Project\Ingersoll Rand\03710-176\CADD\Lots 5 and 6\EC_Concept(7).dwg

Piscataway on '03Piscataway'(J):Project/Ingersoll Rand/03710-176/Cadd/Lots 5 and 6/EC_Concept(7)

Appendix A

Documentation of NJDEP concurrence with previous requests for no further action

Appendix B

Engineering design plans and specifications

Appendix C

Draft deed notices

Appendix D

Soil reuse plan

Appendix E

Quality Assurance Project Plan

Appendix F

Soil erosion and sediment control plan

Appendix G

Health and safety plan

Appendix H

Air Monitoring Plan

Appendix I

Supporting Documentation for Arsenic in Soil Evaluation